Applicant: Kari Sipilä et al.
Application No.: 09/881,608
Art Unit: 1731

Claim Listing

1. (currently amended) In a method of arranging ~~the~~ raw material, energy and waste management of a production plant manufacturing pulp, paper, or board from recycled fibres, which plant receives and processes

a first stream of waste material, and

a second stream of waste material, both streams being produced by a residential community, and being presorted and/or separately collected,

so that the first stream of waste material mainly contains combustible waste to be used as fuel in the production of energy required by the production plant, and

the second stream of waste material mainly contains waste paper and/or board to be used as fibre raw material of the production plant ~~to a considerable extent~~,

said second stream being passed to a pulping stage, to a cleaning and screening stage and to a fibre processing line comprising at least <u>one</u> ~~two~~ of the stages of fractionating, deinking, bleaching, pulp drying and papermaking, and rejects from <u>said</u> at least one of the stages are used as fuel in the production of energy,

wherein the improvement comprises passing the first stream of waste material to a screening stage in which a residual paper-and board-rich fraction is separated from the first stream and passed to the pulping stage where it is processed either together with the second stream of waste material or separately from it to be used as fibre raw material in the manufacture of pulp, paper or board.

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2. (currently amended) The method of claim 1 wherein the production plant produces waste fractions containing raw material and energy as a by-product of the production plant processes, said waste fractions comprising at least rejects and sludges produced in the fibre processing stages, and said waste fractions are utilized within the production plant either as raw material or as energy ~~to a considerable extent~~, or said fractions are separated such that they can be usefully ~~at least principally be~~ used ~~in a further process or another type of useful use~~ outside the production plant.

? What part the Whole thing or just the rejects

3. (currently amended) The method of claim 2 wherein the first stream of waste material after passing the screening stage and rejects from said second stream are both ~~waste fractions used as fuel are~~ gasified and the thus obtained gas is used in a coal, natural gas or oil fired power plant as secondary fuel.

4. (currently amended) The method of claim 1 wherein the manufacture of pulp, paper, or board generates waste comprising a fibre fraction not used as raw material in the pulp, paper or board manufacturing process ~~of poor quality~~, and wherein said waste is passed to the production of energy to serve as fuel.

5. (currently amended) The method of claim 4 wherein ~~the wastes~~ the first stream of waste material after passing the screening stage and rejects from said second stream ~~used as fuel~~ are gasified and the thus obtained gas is used in a coal, natural gas or oil fired power plant as secondary fuel.

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6. (currently amended) The method of claim 1 wherein a portion of the combustible waste of the first stream of waste material passes the screening stage and ~~to be used as fuel~~ is gasified and the thus obtained gas is used as fuel in a gas turbine.

7. (currently amended) The method of 1 wherein the combustible waste of the first stream of waste material after passing the screening stage which is ~~to be~~ used as fuel is gasified to produce combustible gas, and the gas produced by gasifying the combustible waste is used for producing hot drying air for the hot-air drying of pulp, paper or board.

8. (currently amended) The method of claim 7 wherein ~~the~~ drying of pulp, paper or board is accomplished solely as hot-air drying without any drying stages that require the use of steam.

9. (currently amended) The method of claim 1 wherein ash is generated as a by-product in the production of energy, said ash ~~produced in the production of energy is~~ being used as filler in the manufacture of paper or board.

10. (original) The method of claim 9 wherein the ash used as filler in the manufacture of paper or board is produced by burning or by gasifying a sorted waste paper fraction in a separate combustion boiler or gasification reactor intended for this use.

11. (currently amended) The method of claim 9 wherein the ash used as filler in the manufacture of paper or board is produced from ash from a combustion boiler or a gasification reactor by means of after-incineration or another purification ~~bleaching~~ process.

12. (currently amended) The method of claim 9 wherein ash, generated as a by-product in the production of energy, is fractionated and a best quality fraction of the ash produced in the production of energy is used in the manufacture of paper or board and other ash fractions are utilized in other ways.

13. (currently amended) The method of claim 9-12, wherein the other ash fractions are utilized in at the manufacture of cement or earthwork.

14. (original) The method of claim 1 wherein ash produced in the production of energy is used on flue gas scrubbers of power plants for cleaning flue gases.

15. (original) The method of claim 1 wherein paper or board is manufactured by means of multi-layer web forming, in which connection pulp produced from different waste paper fractions is used for different layers of paper or board.

16. (original) The method of claim 1wherein paper and/or board is manufactured on two or more manufacturing lines, using different types of waste paper fractions as fibre raw material.

17. (original) The method of claim 16 wherein fibre waste and/or circulation water from a first manufacturing line is passed to a second manufacturing line.